

## **REMARKS**

### **Status of the Claims**

Claims 1, 4-11 and 28 were pending in this application. By this response, Applicant has amended claims 1 and 9 and added claim 29. The amendment to claim 9 is to remove a period and replace it with a comma. The amendment to claim 1 is fully supported and does not add new matter. *See*, specification pages 8 lines 1-22 and page 8 line 27 to page 9 line 10. Moreover, new claim 29 is likewise supported by the specification. *See*, specification pages 8 lines 1-22. Accordingly, these amendments do not add new matter and are fully supported. Finally, no claims have been cancelled.

In view of the above, claims 1, 4-11, 28 and 29 are now pending in this application.

In the office action, the following rejections were made:

claims 1, 4-11 and 28 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 8, 9, 12, 13, 15-17 and 24 of co-pending application no. 11/649,728;

claims 1, 4-11 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Komiyama *et al.* (U.S. Pat. No. 5,118,567) and Noguchi *et al.* (U.S. Pat. No. 5,476,752); and,

claims 1 4-11 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over European Patent No. 1,086,403 in view of Knell (U.S. Pat. No. 5,346,933) and Kamen *et al.* (U.S. Pat. No. 5,656,336).

Applicant respectfully traverses the above rejections and requests reconsideration of same in light of the above amendments and the following arguments.

### **Arguments**

With respect to the double patenting rejection, Applicant respectfully traverses same and submits that the claims in the present application are patentably distinct from the claims in the co-pending application. Notwithstanding same, should all other rejections be removed, Applicant is prepared to file a terminal disclaimer to over this rejection.

Turning to the remaining rejections, Applicant submits that independent claims 1 and 29 are patentable over the cited art.

Amended claim 1 recites certain photoinitiators and co-initiators therefor. The person of ordinary skill in the art would know that all the photoinitiators recited are *radical* photoinitiators

which are able to crosslink double bonds, but are unable to crosslink epoxy groups. Furthermore, the person of ordinary skill in the art would be aware that epoxy groups are only crosslinked by cationic photoinitiators or thermal crosslinking initiators or agents. Presently amended claim 1 and new claim 29 do not include any cationic photoinitiators or thermal crosslinking initiators or agents.

Komiyama does disclose radical photoinitiators (column 5, lines 6-10) for crosslinking oligomers having double bonds. However, Komiyama does not disclose UV hardening *monomers* which serve as a diluent, as recited in claim 1, but rather discloses photopolymerizable low molecular weight compounds that are *oligomers* (column 4, lines 22 – 35 and Examples 1 and 2). No photoinitiators or thermal crosslinking initiators or agents for crosslinking epoxy groups are present.

But most importantly, Komiyama discloses the use of a *second* heat activatable potential *crosslinking* (curing) initiator or *agent for said epoxy resin* (column 2, lines 10-11), in contrast to the present invention as claimed in present claims 1 and 29, where no photoinitiator or thermal crosslinking initiator or agent for crosslinking epoxy groups is present.

Noguchi discloses epoxy resins (column 8, line 11 ff.), a range of polymers that may be cured in one way or the other (column 2, line 61 ff.) and monomers having one, or two or more ethylenically unsaturated bonds (column 6, line 33 ff.). Radical photoinitiators (column 15, line 21 ff.) and thermally crosslinking agents (column 15, line 1 ff.) may be included in the compositions of Noguchi. However most importantly, the mandatory polymerization initiator used in the compositions of Noguchi is capable of generating a Lewis acid by irradiation, thereby curing the epoxy resin (column 6, lines 20-21) (column 13, lines 47-56). Both the resin composition and the monomer having ethylenically unsaturated bonds that are crosslinked with the aid of such a photoinitiator (column 10, lines 1-22 and following). Present claims 1 and 29 do not include this type of photoinitiator, and epoxy groups are not crosslinked.

European Patent No. 1,086,403 discloses compositions comprising a glycidylether of *e.g.* an aromatic alcohol, an alicyclic epoxide, an actinic-radiation sensitive initiator for *cationic polymerization*, and an actinic radiation sensitive initiator for radical polymerization (page 3, lines 9-19). The glycidylether of an aromatic alcohol and the alicyclic epoxide are cationically polymerizable (page 3, lines 9-10). Present claims 1 and 29 does not include an initiator for cationic polymerization, and epoxy groups are not crosslinked.

The ink composition of Kamen comprises a bisphenol A epoxy resin, an organofunctional silane, a *cationic photoinitiator*, and a fluorinated surfactant (column 1, line 56 to column 2, lines 36). Present claims 1 and 29 do not include a cationic photoinitiator, and epoxy groups are not crosslinked.

The compositions of Knell comprise a blend of one or more epoxy resins and a *curing agent for the epoxy resins* which provides a relatively long latency period (column 2, lines 1-5 and lines 54-58). No photoinitiators are used for curing the compositions of Knell, and no compounds having a radically polymerizable double bond are contained in the compositions of Knell.

Applicant notes that Steinman et al. (Patent 5,476,748) and Xu (US 2007/0149667) use cationic photoinitiators. (*see* abstract in Steinman et al. and paragraph [0012] in conjunction with paragraph [0055] in Xu). Oka et al. uses at least one thermal polymerization initiator for crosslinking the epoxy compounds ((column 13, lines 47-56) in conjunction with column 15, lines 55-56).

Thus, in all compositions of all references cited by the examiner, the epoxy groups of bisphenol A-containing epoxies or other epoxies are crosslinked. Therefore, they cannot render obvious the compositions of the present claims which do not contain any photoinitiator or thermal crosslinking initiator or agent capable of crosslinking epoxy groups.

Accordingly, Applicant submits that since the combination of the prior art does not disclose or suggest each and every one of the claim limitations, claims 1 and 29 are patentable over the cited art. Applicant also submits that the remaining dependent claims are patentable as well as they depend from a patentable independent claim.

**CONCLUSION**

In view of the above, it is submitted that the present application is in condition for issuance and a notice of allowance is respectfully solicited.

If any additional fees are required with this correspondence, the Commissioner is authorized to debit our Deposit Account 50-0545.

Should anything further be required, a telephone call to the undersigned at (312) 226-1818 is respectfully solicited.

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Respectfully Submitted,

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